

In the Claims:

Please cancel claims 1-15.

Please add claims 16-32.

This listing will replace all prior versions, and listings, of the claims in the application.

16. (New) A method for melting down metal-containing material comprising fine-particulate-metal containing material in a metallurgical melting furnace having an interior space, a metal melt material located in the interior space of the furnace, a slag layer floating on top of the metal melt material comprising:

conveying the metal containing material into the furnace through a charging tube having an opening in contact with the slag layer,

applying energy by directing electric arcs toward the metal melt and obliquely against a central region of the furnace,

melting the metal-containing material in the slag layer, and

mixing the slag metal melt.

17. (New) A method according to claim 16 comprising applying energy in a location proximate to the opening of the charging tube.

18. (New) A method according to 16 comprising conveying metal containing material in at least one selected from the group consisting of a lumpy form and fine particulate form to the furnace.

19. (New) A method according to claim 1 comprising conveying metal containing material at a temperature of between 500°C and 1000°C into the furnace wherein the metal containing material is obtained from a reduction process.
20. (New) A method according to claim 19 comprising conveying metal containing material at a temperature of between 600°C and 700°C.
21. (New) A method according to claim 1 wherein the slag layer comprises foamed slag.
22. (New) A method according to claim 21 comprising applying gaseous oxygen to the slag layer to form the foamed slag.
23. (New) A method according to claim 21 comprising adding fine-grained carbon to the slag and applying oxygen onto the slag to form the foamed slag.
24. (New) A method according to claim 1 comprising conveying the metal containing material into the furnace exclusively by gravity.
25. (New) A method according to claim 1 further comprising positioning the charging tube in the slag layer as a function of the rate of conveying the metal-containing material.
26. (New) A method according to claim 1 wherein the charging tube is electrically productive and further comprising providing a voltage measurement device and positioning the charging tube in the slag as a function of voltage measured by the voltage measurement device.
27. (New) A method according to claim 1 wherein the charging tube is electrically conductive and further comprising providing a current measurement device and positioning the

charging tube in the slag layer as a function of current measured by the current measurement device.

28. (New) A method according to claim 1 further flushing the furnace with a gas.

29. (New) A method according to claim 1 wherein the melting down process is a continuous process, and wherein the level of the melt layer in the furnace is continuously maintained.

30. (New) A method according to claim 29 wherein the slag layer in the furnace is continuously maintained.

31. (New) A method according to claim 1 further comprising cooling the melting furnace and foaming water vapor.

32. (New) A method for melting down metal-containing material comprising fine-particulate-metal containing material in a metallurgical melting furnace having an interior space, a metal melt material located in the interior space of the furnace, a slag layer floating on top of the metal melt material comprising:

conveying the metal containing material conveying the metal containing material into the furnace exclusively by gravity,

applying energy by directing electric arcs toward the metal melt and obliquely against a central region of the furnace,

melting the metal-containing material in the slag layer, and

mixing the slag metal melt.